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(71) Applicant(s)

Worlds Apart Ltd
(Incorporated in the United Kingdom)
4 Union Court, 18-20 Union Road, LONDON, SW4 6JP,
United Kingdom

(72) Inventor(s)

John George Stewart

(74) Agent and/or Address for Service

Bailey, Walsh & Co
5 York Place, LEEDS, LS1 2SD, United Kingdom

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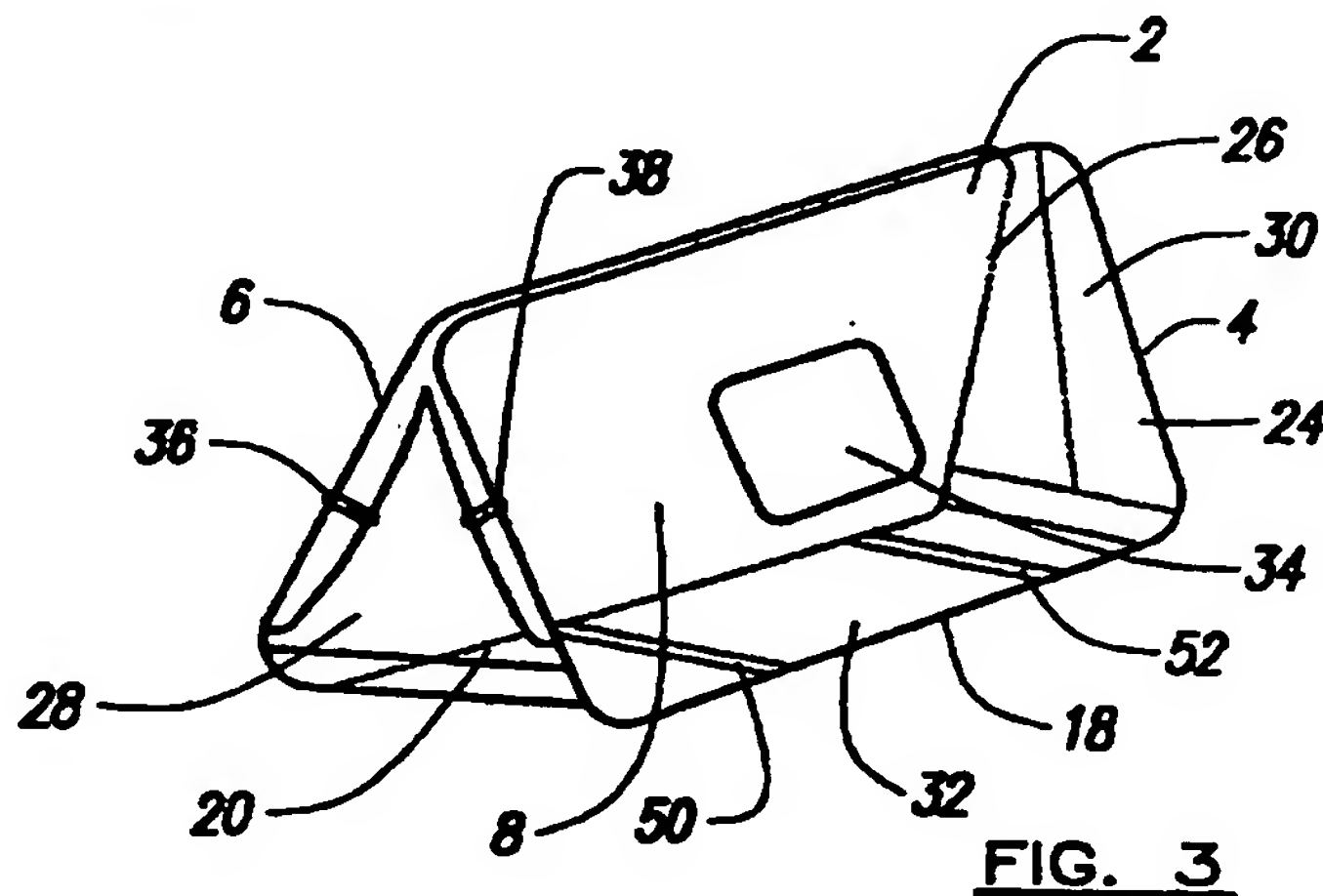
(58) Field of Search

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(54) Abstract Title

A tent structure

(57) A tent structure (2) comprises at least two flexible elongate members (4,6) each formed into a loop, and held in mutual relationship, with a portion of each said frame members held adjacent each other to form the ridge and sides of the tent. At least one retaining member (50) located at the base portion of the tent maintains the spacing of the sides. Manipulation of the flexible members (4,6) allows the tent to be collapsed and stored in a coiled position (fig. 1 not shown).



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1995

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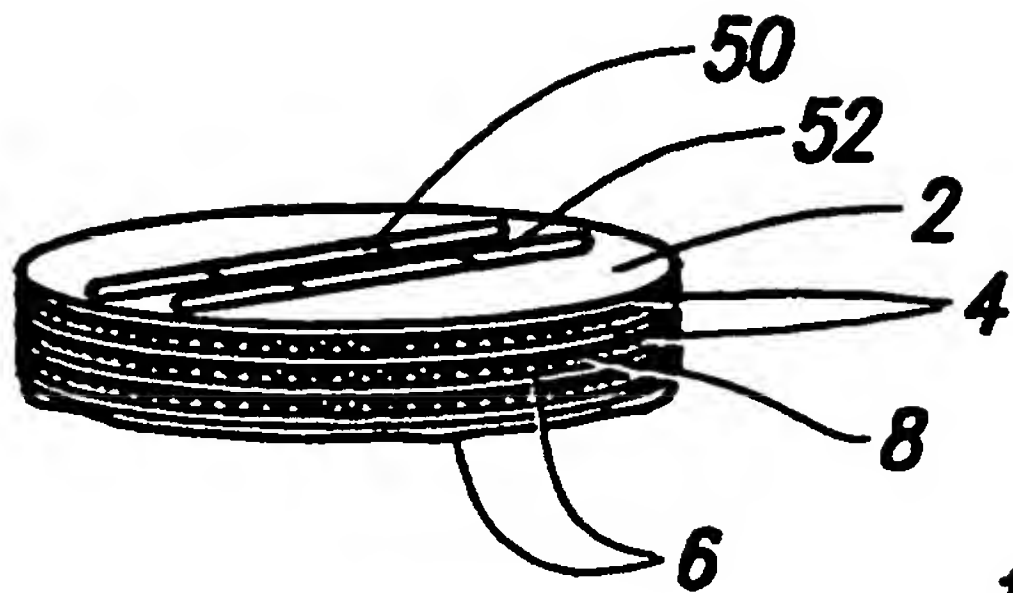


FIG. 1

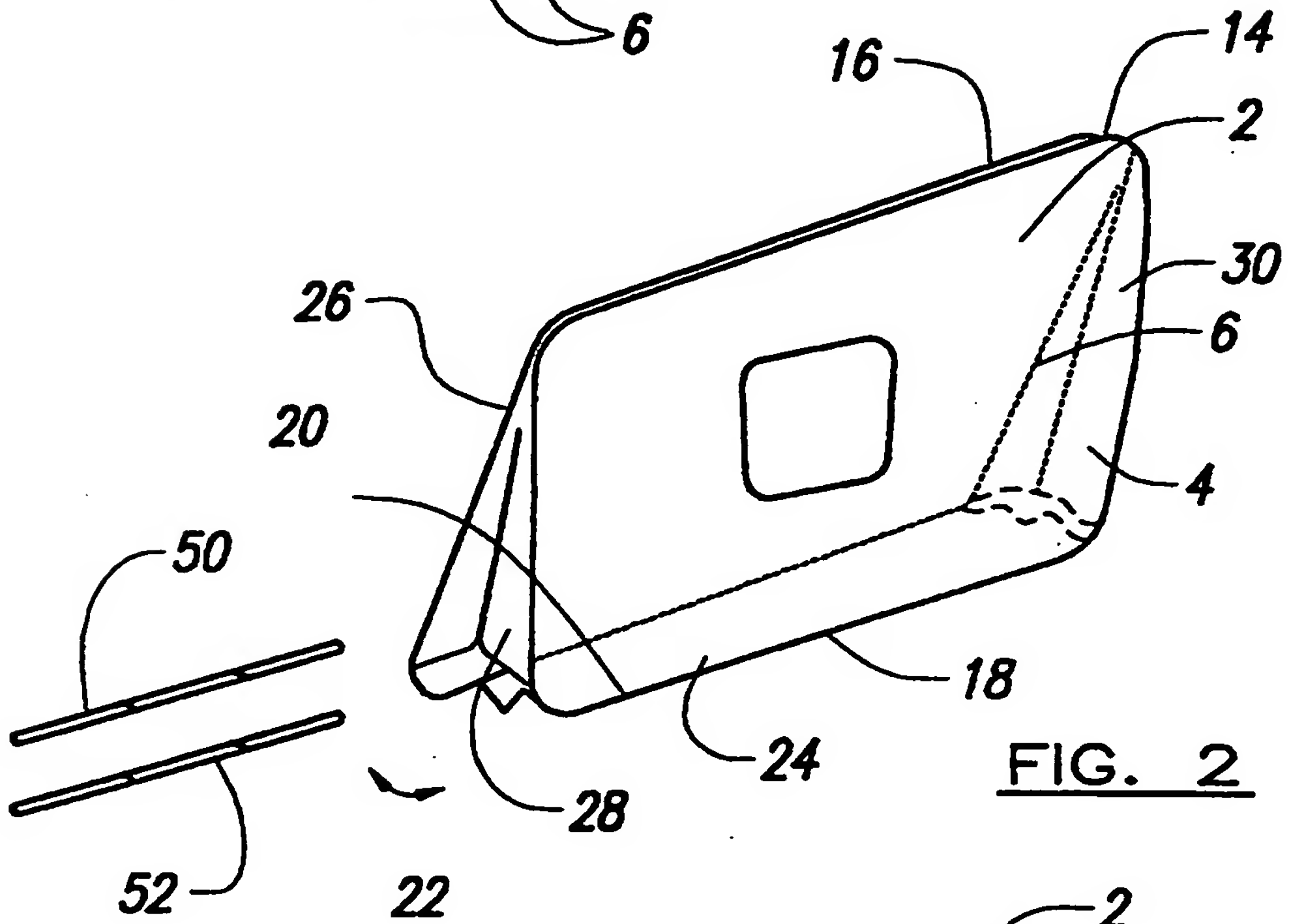


FIG. 2

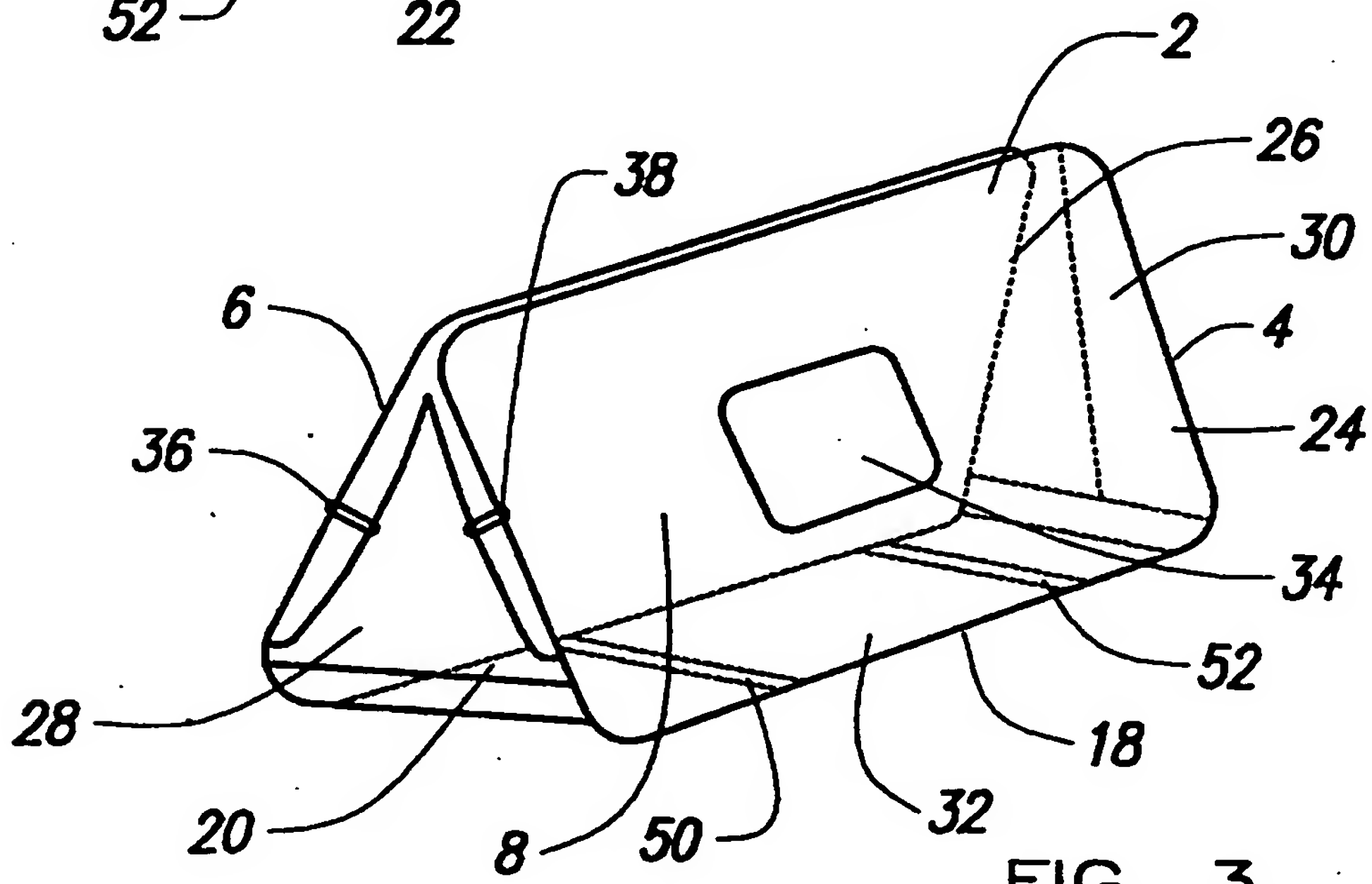


FIG. 3

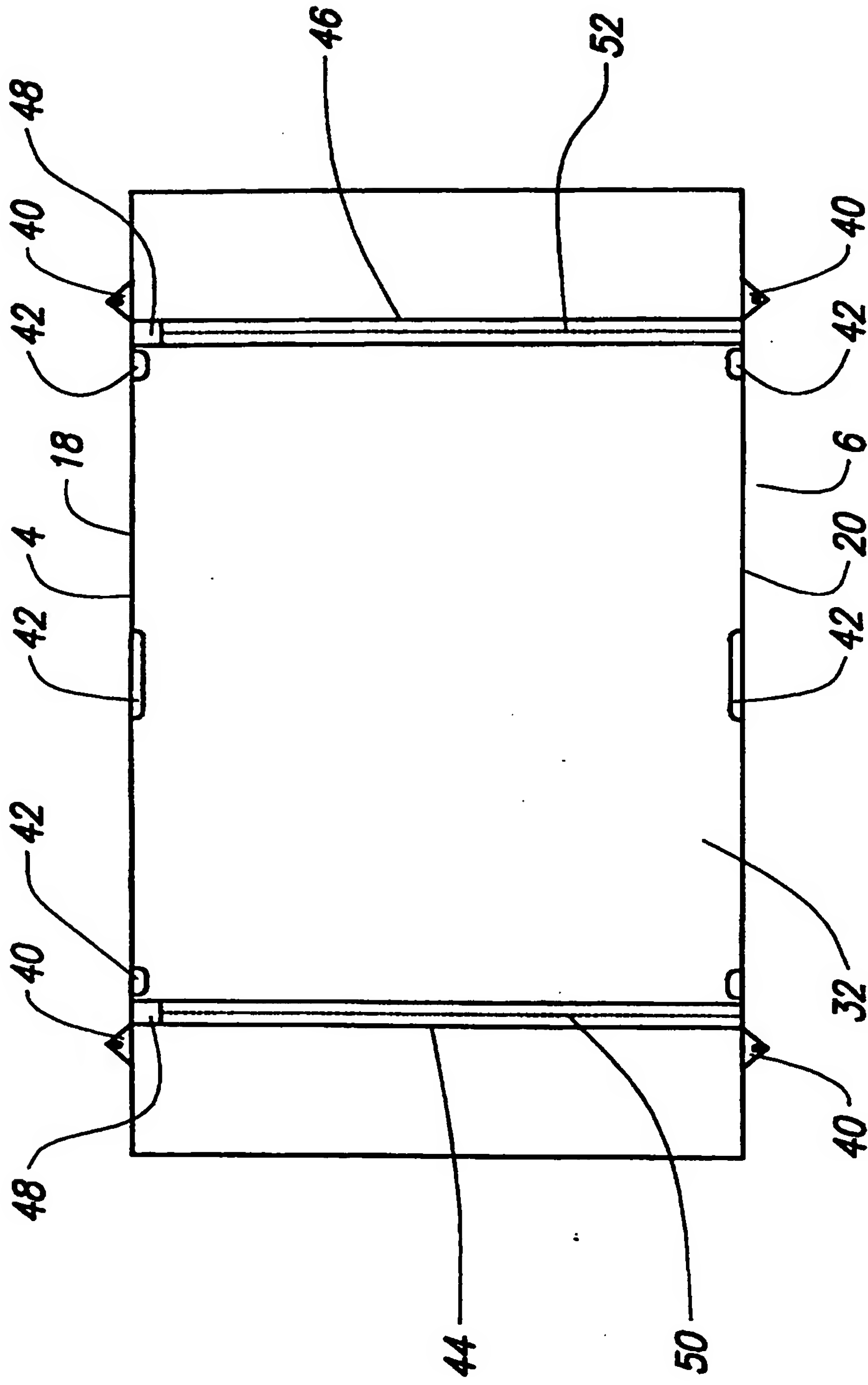


FIG. 4

Collapsible Ridge Style Tent

The invention which is the subject of this application relates to a tent structure of a type which can be moved between a collapsed, flattened and coiled condition, for storage and an erected condition for use as a tent or other accommodation structure.

The provision of tents which can be moved between a storage condition and an in-use condition resiliently by the provision of a frame comprising a number of spring steel members, is known. There are several different embodiments of tents of this type and, in each case, the same are provided with a number of wall portions which are inter-linked and each of said wall portions, in an in-use position, are held in an expanded condition by the spring steel. To move the structure to a storage position, each of the spring steel members is coiled, typically at the same time, and as they are coiled, the sheet material which forms the walls and is supported by the steel spring members, follows the coiling action so that the sheet material of tent structure is flattened and, with the spring steel members retained in the coiled position, the tent structure can be stored.

A problem with this type of structure is that when left to stand without contact from external forces the tent structure is secure and self supporting but if an external force is applied to the same, say for example a person bumping into the structure, wind blowing on the structure or another article falling on the structure, then on certain occasions the structure can be caused to at least partially collapse and, although typically it will resiliently reform to the in-use position, it will be appreciated that at the instant of collapse, there is a possibility of injury to persons in the structure and/or damage to articles held in the structure. A further problem is that

the tent structures formed do not have the appearance of conventional tent structures in many instances.

The aim of the present invention is to provide a structure which can be moved between a coiled storage condition and an in-use position but has added rigidity when in an in-use position.

In a first aspect of the invention there is provided a tent structure, said structure comprising a frame formed of at least two elongate frame members, each formed into a loop, and held in a mutual relationship, with a portion of each of said frame members held adjacent each other, said tent movable between in use and storage positions by manipulation of the frame members which are movable between a coiled storage position and an extended in-use position and, in the in-use position, said frame members, with sheet material attached thereto, forming the side and end walls of the tent structure with the adjacent frame portions forming a ridge of said structure.

Typically the portions of the two frame members are attached or linked to each other to form an edge, said edge forming the ridge of the tent structure. Typically the said portions are linked to be pivotally movable so as to allow the two side walls depending down from the ridge to be extended apart to form the tent structure and brought together so that the frame members lie substantially in the same plane and, from this position, a coiling action can be performed on the frame members to coil the same and the sheet material forming the walls and base to move the same to a coiled storage condition.

In a further aspect of the invention and to improve the rigidity of the structure in the in-use position, there is provided at least one member which, when the frame members are uncoiled and extended,

is positioned to lie between spaced portions of the respective frame members and to maintain said spacing between the said frame members. In one preferred embodiment, the said member is located at the base portion of the tent and therefore maintains the spacing of the respective frame members at the base and hence defines and maintains the area of the base available for use.

In one preferred embodiment, the base is formed of a sheet material, and includes an elongate housing for the reception of said member, said housing running perpendicular to the frame member portions on either side of the base. Typically as many members are provided at spaced intervals along the base as required to provide added rigidity. Typically the said members are formed from a series of rods, which can be engaged to form the member or disengaged for storage purposes and typically the length of each rod will be the same or less than the area taken up of the coiled tent structure so as to allow the rods to be stored with the coiled tent structure and without the need to extend the storage space available.

In a particular embodiment, it is envisaged that the structure will comprise two side walls and a base all formed of sheet material and two end walls with said end walls formed of flap portions of sheet material which can be engaged together to form a closed end wall or disengaged to form an entrance and/or exit from the structure. The side walls may also include window openings or tunnel entrance openings to allow interconnection with tunnels and other tent structures.

In a further feature of the invention, the base of the structure is provided with grip members which allow the structure to grip on particular surfaces, such as, for example, carpets upon which the same may be used. Equally, however, if the structure is to be used

outdoors, the base may be provided with gripping members which are formed to grip and engage with soil, lawns or the like.

Thus there is provided a tent structure in accordance with this invention which can be easily stored, erected to an in-use position without the need for the interconnection of the frame members and, can be made to be additionally rigid by the location of further members in conjunction with the frame members.

Specific embodiments of the invention will now be described with reference to the accompanying drawings, wherein:-

Figure 1 illustrates the tent structure in a storage condition;

Figure 2 illustrates the tent structure in a partially erected condition;

Figure 3 illustrates the tent structure in an in-use position; and

Figure 4 illustrates the base of the tent in an in-use position.

Referring firstly to Figure 1, there is illustrated the components of the tent structure 2 according to the invention in a storage condition and which components comprise two frame members, 4 and 6, shown in a coiled condition, sheet material 8 supported by said frame members shown in a flattened condition and two sets of interconnected retaining members 50, 52, are also provided in a storage condition. Thus, the components as shown in Figure 1 can be held and retained in that condition within a bag or using other retention means not shown.

Figure 2 illustrates the tent according to the invention in a partially erected condition in which the frame members 4 and 6 are shown uncoiled and each in the form of a loop and it is also illustrated

how portions 14, 16, of the frame members 4 and 6 respectively are hingedly connected and that the opposing edges 18, 20 of the frame members are moved apart into a spaced relationship, as illustrated by arrow 22, to form the tent into a ridge shaped tent with the ridge formed at the join between the portions 14 and 16 of the frame members. The material 8 positioned and attached to one of the frame members forms the side walls 24 and 26 and the material 8 attached to and suspended between the frame members forms the end walls 28, 30 of the structure. Sheet material is also provided to form the base 32 of the structure. The retaining members 50, 52 are also formed by engaging the rods to form the retaining members to the required length.

Figure 3 illustrates the tent structure of Figure 2 in a fully erected and in-use condition and the side walls 26, 24 are shown fully moved apart to form the ridged tent formation with the portions 14, 16 of the frame members forming the ridge of the tent. The edges 18, 20 of the frame members 4, 6 are retained in a spaced relationship by engaging the rods to form members 10, 12. The base 32 of the tent structure is formed of sheet material which is also coiled originally but is extended to a fully extended position by the movement of the edges 18, 20 of the respective frame members apart so as to form the fully extended base of the tent structure.

In the embodiment shown, the side wall 24 is provided with a window 34 and it is also possible that the side walls can be provided with apertures to allow the connection of tunnel structures and/or interconnection with other tent structures. Also, in the embodiment shown, each of the end walls 28, 30 is formed as a door by a number of portions of sheet material which can be engaged together to form a closed end wall as shown at 30 in Figure 3 or the portions are held apart by retaining means 36, 38 to form an

opening 40 which can be used as an entrance and exit into the structure as shown at end 28 in Figure 3.

Figure 4 illustrates the base from the underside of the tent structure when erected and said base includes a number of retaining portions 40 which, if the tent is used outside, receive gripping members in the form of pegs to allow the same to be pushed into the surface and hence retain the tent in position. In addition, or alternatively, gripping means 42 are provided which allow the tent to grip on a surface, such as a carpet, for indoor use, and hence again retain the tent structure in position on the carpet. In one embodiment the gripping means 42 can be strips of Velcro^(RTM) or alternatively may be provided in other gripping formations to provide the required effect.

Also provided on the base are two elongate housings 44, 46 which extend substantially across the width of the base and so extend between the frame members 4,6 and in particular edge portions 18,20 as indicated. Each of the housings is provided with an opening 48 at one end thereof although an opening may be provided at each end if required and said openings can be enclosed by flaps if required. The housings are provided for the reception of retaining members 50 and 52 which are indicated in broken lines in position in the housings in Figure 4. It is shown that the members 50, 52 extend substantially across the width of the base and hence their ends are positioned at or adjacent to the frame members 4 and 6. These members 50 and 52 act to retain the frame member edges 18,20 apart, and hence the sheet material base, in the extended spaced relationship so as to maintain the base area in the in-use position. The provision of the retaining members also provides added rigidity to the structure as a whole thereby allowing the same to withstand falls or bumps on the side walls and allow the structure to more easily resiliently return to the in use position.

It will therefore be appreciated that the structure according to this invention has the advantage of being storable in a coiled condition using resilient frame members which, when the structure is released, expand to move the structure to an erected in-use position and at the same time, the provision of the retaining members 50 and 52 which are located in relationship to the frame members, ensures that the structure when in use, is maintained in a fully erected condition thereby improving the rigidity of the structure and the safety of using the same.

Claims

1. A tent structure, said structure comprising a frame formed of at least two elongate frame members, each formed into a loop, and held in a mutual relationship, with a portion of each of said frame members held adjacent each other, said tent movable between in use and storage positions by manipulation of the frame members which are movable between a coiled storage position and an extended in-use position and, in the in-use position, said frame members, with sheet material attached thereto, forming the side and end walls of the tent structure with the adjacent frame portions forming a ridge of said structure.

2. A tent structure according to claim 1 wherein the portions of the two frame members which are held adjacent each other, are attached or linked to each other to form the ridge of the tent structure.

3. A tent structure according to claim 2 wherein the portions of the two frame members are held in adjacent positions by engagement with the sheet material.

4. A tent structure according to claim 2 wherein the portions of the frame members are linked to be pivotally movable so as to allow the two frame members to be moved apart to form the tent structure in use and brought together so that the frame members lie substantially in the same plane and, from this position, can be coiled to a storage position.

5. A tent structure according to claim 1 wherein there is provided at least one retaining member which, when the frame members are uncoiled and extended in the in-use position, is

positioned to extend between the spaced frame members and to maintain said spacing between the said frame members.

6. A tent structure according to claim 5 wherein the said retaining member is located at the base portion of the tent and maintains the spacing of the respective frame members apart at the base when the structure is in the in use position.

7. A tent structure according to claim 6 wherein the base of the tent structure is formed of sheet material and includes an elongate housing for the reception of each retaining member, said housing formed perpendicular to the frame member portions at either side of the base and extending between the same.

8. A tent structure according to claim 5 wherein the retaining member is formed from a series of interconnected rods which can be disengaged for storage purposes.

9. A tent structure according to any of the preceding claims wherein the structure is provided with grip members which allow the structure to grip on a surface on which the structure is placed.

10. A tent structure according to claim 9 wherein the grip members are pegs to engage with soil, lawns or the like.

11. A tent structure according to claim 9 wherein the grip members are portions of material which engage with carpets or other textile surfaces.

12. A tent structure as hereinbefore described with reference to the accompanying drawings.